CLAIM

I claim:

1. A method for producing age-homogenous cell population in long-term cultivation, comprising:
   (a) means for collecting age-homogenous initial cell population; and
   (b) means for maintaining age homogeneity of said cell population during continued cultivation.
2. Said means for collecting age-homogenous initial cell population of claim 1 include means for immobilizing cells onto a predetermined surface and means for collecting only those unbound newborn cells onto a new surface.
3. Said surface of claim 2 is made of materials selected from the group comprising glass, plastic, fabric, paper, and metal.
4. Said surface of claim 2 include cell-adhering and cell-attracting material coated on a surface.
5. Said cell-adhering and cell-attracting material of claim 4 include materials selected from the group comprising poly-L-lysine, avidin, and magnetic field.
6. Said means for collecting age-homogenous initial cell population of claim 1 includes means for labeling cells at a predetermined cell age and means for specific collection of said labeled cells.
7. Said means for labeling cells of claim 6 include using substances selected from the group comprising biotin, fluorescent or luminescent molecules such as green fluorescent proteins, and recombinant genes-coded molecules capable of emitting fluorescence or luminescence.
8. Said means for collecting specifically labeled cells of claim 6 include using methods selected from the group comprising ligand binding, laser sorting, and immunological reactions.
9. Said means for maintaining age homogeneity of said initial cell population of claim 1 include means for flowing liquid medium over said collected cells to flush out offspring cells reproduced from said collected cells.
10. Said means for flowing liquid medium over the said collected cells of claim 9 include using methods selected from the group comprising:
    (a) continuous horizontal flow of liquid medium over the surface containing the said cells;
    (b) continuous vertical flow of liquid medium through the surface containing the said cells;
    (c) frequent raising out and lowering into the culture medium the surface containing the attached initial cells; and
    (d) intermittent feeding into and withdrawing from the chamber liquid medium that is used for growing the attached initial cells on the surface.

11. An article of instrument for producing age-synchronized cell population, comprising:
    (a) a structural means for arranging an array of multiple predetermined surfaces used for capturing and retaining cells,
    (b) a mechanical means for flowing liquid over the said surfaces to provide nutrition to the captured cells and to flush away newborn cells from the captured cells,
    (c) a constructional means for connecting the said array of surfaces and the said liquid flow mechanism into one integrated instrument.

12. Said article of instrument of claim 11 wherein said structural means for arranging an array of multiple individual surfaces comprises a predetermined sheet of predetermined material containing a number of predetermined holes, a number of predetermined poles matching said holes, and a number of predetermined surface material which can be attached to one end of said poles.

13. The array of surface of claim 12 wherein said poles are made of a predetermined material and in a predetermined shape and size in either solid or hollow configuration.

14. The array of surface of claim 12 wherein said surface material included the native material making the pole and the additional materials coated onto the pole.

15. The native material making the pole of claim 14 include plastic, metal, glass, wood.

16. The additional materials coating the pole of claim 14 include poly-L-lysine.

17. Said article of instrument of claim 11 wherein said mechanical means of flowing liquid over said surfaces is achieved through methods selected from the group comprising:
    (a) continuous horizontal flow of fresh medium through said container;
    (b) frequent intermit feeding and removal of liquid medium; and
    (c) means for increasing current force flushing the said cells attached to the said surface.

18. The flowing liquid of claim 17 includes fresh medium and used medium that is filtered to remove cells.

19. The means of creating a liquid flow of claim 17 includes use of a pump.

20. Said constructional means for connecting said array of surfaces and said liquid flow mechanism of claim 11 including using container selected from the group comprising a tank, a cup, a beaker, a flask, a basin, and a cylinder, each possessing predetermined material, shape, volume, and the appropriate means of connecting each type of containers.